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INTERACTION SUPPORT FOR THE GLOBAL FLUXNET DATA SET

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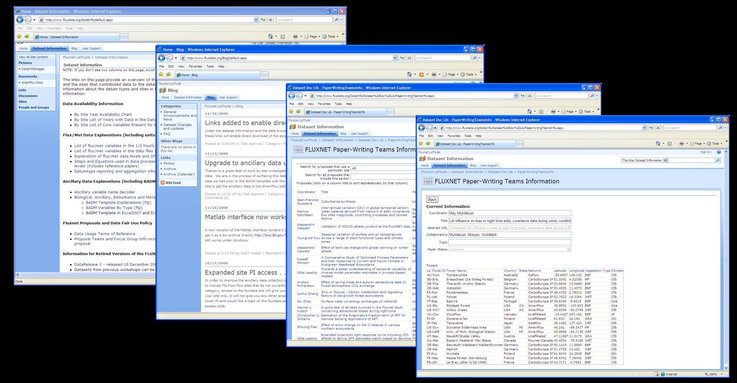
Abstract

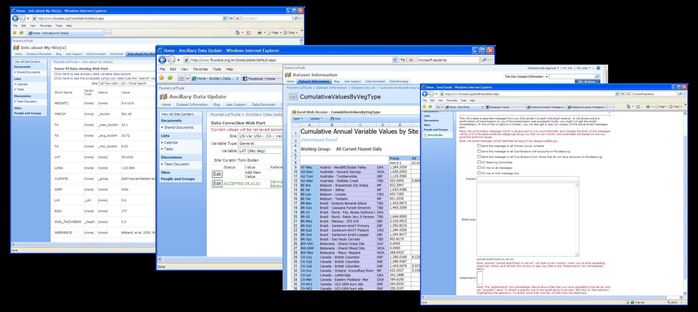
The FLUXNET synthesis data set contains on the order of 960 site-years of sensor data from over 260 sites around the world. This is a living data set; a data update this year should add new site-years from over 200 sites. The data are the ground truth for carbon-climate studies linking models and remote sensing as well as comparative field analyses. Over 70 synthesis teams are using this data to do global and regional scale analyses. The size of the dataset makes browsing the data difficult; for example, a search of the dataset for sites with particular meteorological characteristics would require a download of the complete dataset and then running all of the data through a preliminary analysis. Synthesis studies often need additional non-sensor measurements such as root biomass, soil composition, or fire occurrence; some of these variables require detailed knowledge of the site and the science. The large number of sites makes the assembly, cleaning, and long term curation of the non-sensor data daunting; a virtual conversation between the data providers, data users, and data curators is needed. The large number of sites also makes tracking updates to the site information and communicating with site PIs difficult for synthesis study teams.

We have developed a collaborative web portal which enables data browsing on line, orchestrates the data curation virtual conversation, and enables the synthesis team conversation with sites. Behind the portal is an archive database and OLAP data cube for simple data browsing through query. Scientists can download data files, browse data summaries, update metadata and annotate the data through the portal. Synthesis teams can select sites and exchange e-mail with those sites through the portal. The data can also be browsed directly from Excel spreadsheets or MatLab from the scientist desktop; the scientist sees no difference between data "in the cloud" and on the desktop. We believe the portal enables science researchers to concentrate on science rather than data management and the collaboration features enable continued growth.

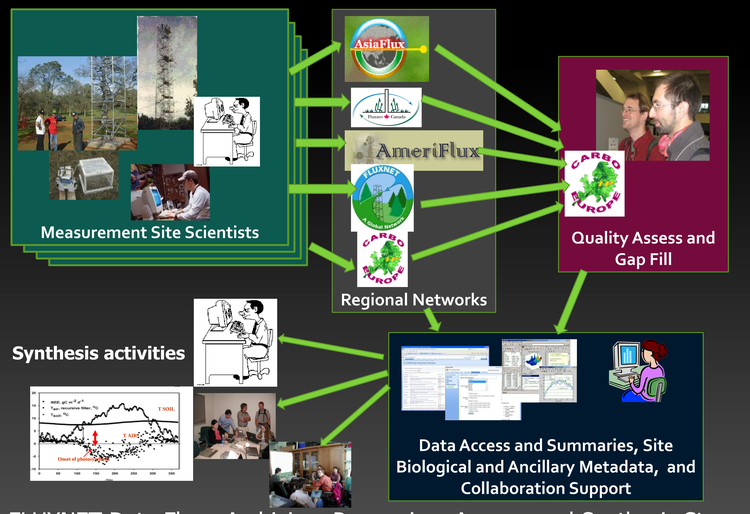
Worldwide FLUXNET Tower Locations



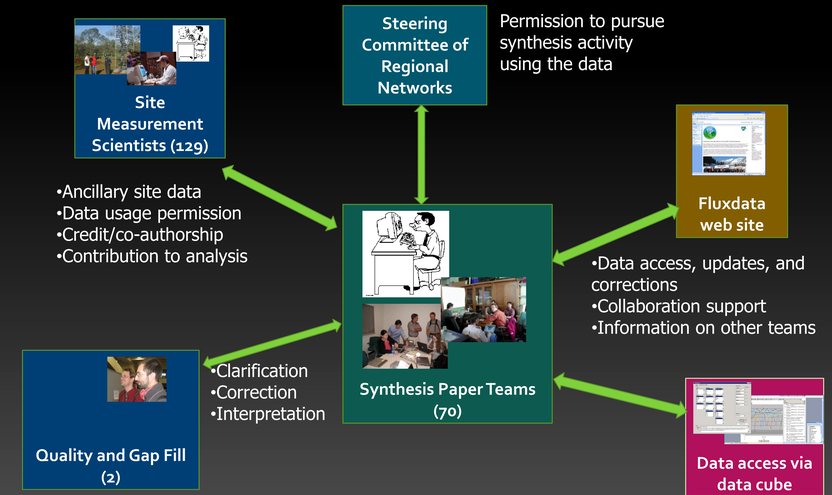
Fluxdata Collaboration Portal Public Views: blog, user manual, synthesis activity information, and information about the data set



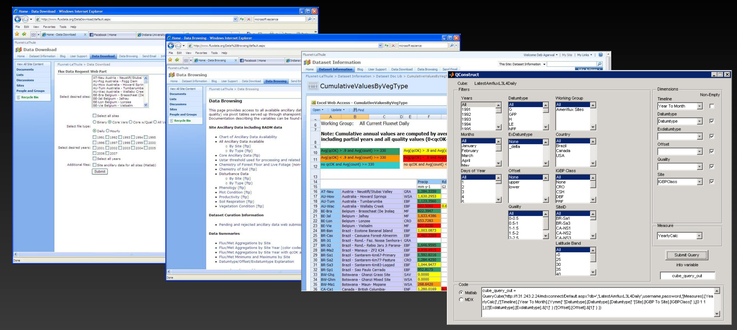
Fluxdata Collaboration Portal Measurement Site Scientist Views: site information display and update, site data download, communicate with synthesis teams, and e-mail participants



FLUXNET Data Flow: Archiving, Processing, Access, and Synthesis Steps



FLUXNET Virtual Conversations to Support Synthesis Activities



Fluxdata Collaboration Portal Synthesis Team Views: download data, e-mail measurement site scientists, extensive site and data set details, and data access and browsing via Matlab and Excel

URL: http://www.fluxdata.org/
e-mail: fluxdata-support@fluxdata.org